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Proceedings of the Maritimes Regional Advisory Process on Scotia-Fundy Groundfish Stocks

23-24 November 2004
George Needler Boardroom
Bedford Institute of Oceanography
Dartmouth, Nova Scotia

Julie M. Porter
Meeting Chairperson

Fisheries and Oceans Canada
Biological Station
531 Brandy Cove Road
St. Andrews, New Brunswick
E5B 2L9

Compte rendu de la réunion du Processus consultatif régional sur les stocks de poisson de fond de Scotia-Fundy

Les 23 et 24 novembre 2004
Salle de conférences George Needler
Institut océanographique de Bedford
Dartmouth (Nouvelle-Écosse)

Julie M. Porter
Présidente de séance

Pêches et Océans Canada
Station biologique
531, chemin Brandy Cove
St. Andrews (Nouveau-Brunswick)
E5B 2L9

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Foreword

The purpose of these proceedings is to archive the activities and discussions of the meeting, including research recommendations, uncertainties, and to provide a place to formally archive official minority opinions. As such, interpretations and opinions presented in this report may be factually incorrect or miss-leading, but are included to record as faithfully as possible what transpired at the meeting. No statements are to be taken as reflecting the consensus of the meeting unless they are clearly identified as such. Moreover, additional information and further review may result in a change of decision where tentative agreement had been reached.

Avant-propos

Le présent compte rendu fait état des activités et des discussions qui ont eu lieu à la réunion, notamment en ce qui concerne les recommandations de recherche et les incertitudes; il sert aussi à consigner en bonne et due forme les opinions minoritaires officielles. Les interprétations et opinions qui y sont présentées peuvent être incorrectes sur le plan des faits ou trompeuses, mais elles sont intégrées au document pour que celui-ci reflète le plus fidèlement possible ce qui s'est dit à la réunion. Aucune déclaration ne doit être considérée comme étant une expression du consensus des participants, sauf s'il est clairement indiqué qu'elle l'est effectivement. En outre, des renseignements supplémentaires et un plus ample examen peuvent avoir pour effet de modifier une décision qui avait fait l'objet d'un accord préliminaire.

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200, rue Kent Street
Ottawa, Ontario
K1A 0E6

http://www.dfo-mpo.gc.ca/csas/

CSAS@DFO-MPO.GC.CA

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SUMMARY

Each fall, the Maritimes Science Branch reviews the status of Scotia-Fundy groundfish stocks. The 2004 RAP fall review met during 23-24 November 2004 at the Bedford Institute of Oceanography to review updated assessments for the 4X/5Y cod and 4VWX 5Zc pollock resources, and to provide biological advice relevant to the 4TVW haddock stock and its potential for harvest. This document contains the proceedings from this meeting.

RÉSUMÉ

Tous les automnes, la Direction des sciences de la Région des Maritimes examine l'état des stocks de poisson de fond de Scotia-Fundy. En 2004, la réunion d'examen du PCR a eu lieu les 23 et 24 novembre à l'Institut océanographique de Bedford. Elle avait pour but d'examiner les mises à jour des évaluations des stocks de morue de 4X/5Y et de goberge de 4VWX et 5Zc, et de formuler un avis biologique au sujet du stock d'aiglefin de 4TVW et de son potentiel d'exploitation. Le présent document est un compte rendu de cette réunion.

INTRODUCTION

Each fall, the Maritimes Science Branch reviews the status of Scotia-Fundy groundfish stocks. The 2004 RAP fall review met during 23-24 November 2004 at the Bedford Institute of Oceanography to review assessments for the 4X/5Y cod and 4VWX 5Zc pollock resources, and to provide biological advice relevant to the 4TVW haddock stock and its potential for harvest. An assessment methodology review for the 4VWX 5Zc pollock resource was completed in April 2004 (Res. Doc. 2004/040). An assessment methodology review for 4X/5Y cod is proposed for 2005.

Meeting Chair, J.M. Porter welcomed participants (Appendix 1) and apologized for the lateness of the formal invitation (Appendix 2), and the meeting dates. The Agenda (Appendix 3) and remit (Appendix 4) for the meeting were reviewed.

The Chair also apologized on behalf of the Region that the Proceedings of the 2002 and 2003 fall groundfish RAPs are not available.

The objective of the meeting was to address the issues on the remit (Appendix 4) and to develop scientific consensus through peer review. The Chair noted that RAP produces four different documents: Stock Status Reports (SSRs), Fishery Status Reports (FSRs), Research Documents (Res. Docs.), and a RAP Proceedings document (this document).

During the meeting, each working paper (Appendix 5) was presented by one or more of the authors, followed by a discussion of that paper. Rapporteurs were assigned to summarize these discussions. In addition, research recommendations were discussed, although only briefly, given the current resource limitations in the Department. Finally the texts of the SSRs for 4X/5Y cod and 4VWX 5Zc pollock, and the FSR for 4TVW haddock were drafted and agreed to by consensus. The meeting was initially scheduled for 2.5 days, but the work was completed in only 2 days. The Proceedings were subsequently adopted by correspondence (Appendix 6).

Participants were reminded that RAP is a forum for scientific review and that management issues would not be considered, and that RAP deliberations and conclusions would not be finalized until the SSRs/FSR had been made public.

It was noted that many of the evaluations were impacted by the lack of 2004 summer research vessel (RV) survey information, due to technical problems with the *CCGS Needler*. The 2004 RV index may not be directly comparable to previous years because the survey was conducted by the *CCGS Teleost* and conversion factors between it and the *CCGS Needler* are not available.

OVERVIEW OF OCEANOGRAPHIC CONDITIONS

Presentation Highlights (Presenter: D. Brickman)

An overview of oceanographic conditions for 2004 was presented in order to provide some background for the discussion of the stocks being reviewed in this meeting.

Air temperature conditions at Shearwater and Sable Island were slightly below normal in January to October 2004. Sea surface temperatures on the Scotian Shelf were variable but generally warmer than normal on the eastern Scotian Shelf, and colder than normal in the Gulf of Maine and Bay of Fundy. Ice extent was slightly less than normal in 2004, carrying on an approximate 10 year trend of reduced ice coverage (note that 2003 ice coverage was much greater than average). Sable Island windstress magnitude was not notably different from climatology, although spring winds were more southerly than normal.

From the July RV survey, ocean surface temperature anomalies were negligible on the eastern Scotian Shelf, and generally less than zero from the central Scotian Shelf through to the Bay of Fundy. No region of higher surface temperature was found. In 2004, near-bottom temperatures were generally colder than normal, with the eastern Scotian Shelf slightly below normal and colder than normal conditions (~2° C) existing from the central Scotian Shelf through to the Bay of Fundy. In particular, Emerald and Browns banks were about 3° C colder than normal.

Summer bottom oxygen and nitrate were similar to climatology, and consistent with the average/normal state of the circulation on the eastern seaboard. The spring bloom seemed normal with respect to climatology.

In summary, the physical and biological variables reported for 2004 represented a state similar to climatology. The most notable deviation was the July bottom temperatures which indicated relatively cold conditions compared the climatology.

Discussion (Rapporteur: D. Brickman, J. Porter)

Discussion and feedback from participants included requests for more timeseries data, biological variables and analyses specific to events in the fishery. It was also discussed that requests for specific data could be made *prior* to the RAP, and that these will be incorporated in future presentations, if appropriate and where possible.

It was also suggested that the correlation between species assemblages and oceanographic conditions should be examined, though this is a large-scale project that requires dedicated input from both fisheries scientists and oceanographers.

4X/5Y COD

Remit

- Evaluate the completeness and accuracy of fishery statistics for cod in 4X/5Y improved in 2003 or 2004.
- Determine if the biomass of cod has increased sufficiently to consider an increase in landings above the current TAC of 6000 t. If not, evaluate the prospects for rebuilding if catches are maintained at the current TAC of 6000 t. Provide details for the Bay of Fundy and Scotian Shelf separately.

Working Paper: Clark, D.S., and J.M. Hinze. 2004. Assessment of Cod in Division 4X/5Y in 2004. RAP Working Paper 2004/27.

Presentation Highlights (Presenter: D. Clark)

The TAC from 2000-2004 has been 6000 t annually and landings dropped to the lowest recorded in 2003 at 5600 t. Despite the record low landings, survey biomass indices have not increased. Recruitment indices in both surveys have shown improvement for 1998-2001 year classes over the previous five year classes. The 2002 year class, however, appears weak. Rebuilding was expected to be supported by the incoming 1998 and 1999 year classes but their abundance declined more rapidly than expected and an increase in biomass did not materialize. Prospects for rebuilding are now dependent only on the incoming 2001 year class and it is unlikely that any sustained increase in biomass will be achieved at a TAC of 6000 t.

Discussion (Rapporteur: P. Hurley)

In 2003, no VPA formulation was accepted for the 4X/5Y cod assessment. Differences in survey trends among regions in 4X were felt to be contributing to problems in the analysis, and further attempts at analytical assessment were forestalled, pending completion of tagging studies and conclusions on how to partition landings to appropriate biological stock components. This work is underway, and is expected to yield results in 2005. Once this work has been completed and reviewed, a new framework will be developed for the assessment of this resource. In the interim, survey and fishery data are examined to determine if population biomass has increased to an extent which could permit an increase in TAC, following 5 years at the low TAC of 6000 t.

The Fishery

There was a question regarding the increase in the proportion of landings in 4Xp in the 1960s and the reason for the subsequent decrease. It was suggested that the decrease in cod landings was a result of the introduction of quotas and other restrictive measures for 4X haddock, but it was observed that the decline occurred before 1970. The reason for the decline is unclear.

It was clarified that the level of observer coverage was calculated on the basis of tons observed, not trips observed.

There was discussion about the level of landings in the 2004 fishing year-to-date relative to the same period in 2003. The fixed gear sector has the largest quota share but landings are down relative to 2003. There is also a decrease in the number of active licenses in 2004. Catch rates were low during the summer months which are the peak period for the fixed gear sector, bait prices were high, fish prices were low and many boats didn't fish, or only made one or two trips. The fixed gear sector will be unable to make this up in the remainder of the year. It was suggested that, if the seasonal progression in bottom temperatures was out of phase by a month or two as indicated by several industry representatives during the presentation on environmental conditions, this would have a large impact on the fixed gear fishery. The gillnet and otter trawl landings were comparable to previous years, it was only the hook and line landings that were down. Only one longline group has caught their cod allocations but there were suggestions that this was a result of 5Z cod being reported as 4X cod.

In specific response to the remit question, the following was concluded. It was indicated in 2004 that 4X/5Y cod might have been over-reported, but it was suggested that this was only a few boats in one Management Board. There was a suggestion that overall, the accuracy of landings had improved in 2004. The fishery directed primarily for haddock in recent years and cod was a bycatch, therefore there was no incentive to under-report and/or high-grade cod. It was suggested that no one would discard cod as the price was higher.

Resource Status and Outlook

In discussion of the age structure, it was noted that the bubble plots of the indices-at-age support that there are not many old fish in the population. It was pointed out that there has been a gradual reduction in the age structure. As a result of increased pressure in the 1980s, there has been a long period of depletion and no effort to shepherd subsequent year classes. There was no dramatic change in 2004.

There was a question regarding the impact of a 2-3°C decrease in bottom temperatures during the 2004 RV survey. It was pointed out that while the 2004 RV survey results were not being used (because of the vessel change, see Introduction) to estimate abundance; there was consistent methodology used for the 2004 ITQ survey. There was the observation that the 2004 fishery was six weeks later than usual, and that this wasn't confined just to the groundfish fishery, but that there were similar changes in the lobster and herring fisheries. There was a brief discussion of the possible mechanism for a negative impact of this delay on the surveys and the fishery.

It was recommended that the 2004 RV survey indices should be represented with a different symbol when plotted. Similarly that there should be a statement regarding

the vessel change and that without vessel calibration, the 2004 survey was not comparable to the time series. There was discussion of the age composition in the 2004 survey and it was concluded that while the indices shouldn't be used in abundance estimation, the age structure would not have been affected.

There was a question about the proportion of tags from the recent tagging study that had been returned from outside 4X. Might the high total mortality (Z) values reflect migration out of the stock area? It was concluded that a proper analysis to address this should be included in the assessment methodology review.

There was discussion of the effectiveness of the rebuilding strategy. There was an observation that the resource had sustained landings of 20-30,000 t historically until the past decade and now the conclusion is that the resource cannot sustain landings of 6000 t. It had been expected that the moderate 1998 and 1999 year classes would have resulted in some rebuilding of the spawning stock biomass (SSB) under a 6000 t TAC. The catch-at-age data and the numbers-at-age from the surveys suggest that very rapid depletion of these year classes has occurred; the fishing mortality rate (F) on these year classes must have been excessive when they were young and they are now gone and the expected rebuilding did not materialize. The current situation is similar: there are no older fish in the population, but only one moderate year class this time (the 2001 year class). A TAC of 6000 t is likely not sustainable, and will not result in rebuilding. The experiment has already been conducted once, it should not be repeated. An exceptional year class is needed to rebuild under the current TAC strategy.

There was a suggestion that lowering the quota in eastern 4X may not be an effective conservation tool, as there may be other factors there that should be considered (e.g., seals); that is to say, rebuilding may be possible in the Bay of Fundy but not on the Scotian Shelf.

The Chair summarized the discussions in relation to the remit: recent fisheries statistics were adequate in 2003 and 2004; rebuilding had not occurred under a 6000 t TAC and rebuilding is unlikely if the 6000 t TAC is continued.

Research Recommendations

There is already work underway to partition landings and indices into two separate stock components, in preparation for an assessment methodology review. This includes an analysis of present tagging data, and it was concluded that there was no need to wait for results from the current US tagging study to become available. It was indicated that there was a tentative plan to initiate a Framework Assessment for 4X/5Y cod in 2005. It was questioned if this would be too soon, given anticipated changes within Science Branch and Marine Fish Division, and given the experience with pollock. It was noted that it is recommended in the Expert Opinion for 4X haddock that there be further review and there was a suggestion whether the two stocks should be reviewed together. The group was reminded that the results of the

assessment review process were not satisfactory when this was attempted in 2002, perhaps due to attempts to incorporate Traffic Lights and decision rules, and caution was urged when planning assessment methodology reviews for 2005. The stepwise approach to the framework assessment used for the Pollock was considered useful. There was a recommendation from the group that there should be some integration in the review process for cod and haddock, particularly where there are common components, such as review of the fishery.

It was agreed that the working document be completed as a **Res. Doc.**, but should include indices back to 1970s.

4TVW HADDOCK

Remit

- In support of potential changes in management measures in 2005/06, report on recent trends in body growth and recruitment of 4TVW haddock.
- If available, consider for information only a report from GEAC on the 2004/05 Trial Fishery.

Working Paper: Mohn, R.K., and J.E. Simon. 2004. Growth and Distribution of 4TVW Haddock. RAP Working Paper 2004/29.

Presentation Highlights (Presenter: R.K. Mohn)

The directed fishery for 4TVW haddock was closed in 1993 and has not re-opened in spite of some rebuilding. Research survey data are used to examine the current numbers, growth and distribution of the haddock resource. Furthermore, a Trial Fishery was planned for 2004 to investigate the potential of 4TVW haddock for harvest if the minimum size, currently 43 cm, was dropped to make more of the haddock available. Results from the analyses of the survey data show that both total and spawning biomass are near the long-term average. However, this rebuilding is dominated by small fish as the growth rate has steadily fallen since the early 1980s. Results from the Trial Fishery were not available.

Discussion (Rapporteur: S. Gavaris)

Length-at-age declined since 1970 but the decline was particularly pronounced between 1984 and 1987 at older ages. The growth rate of the strong 1999 year class appears to have been further diminished. Therefore, this year class is not expected to contribute substantially to the biomass >43 cm in the immediate future. Patterns for weight-at-age are similar, suggesting that there has not been much change in condition. Previous studies have reported that maturation is earlier during this period of slower growth, but the changes in proportion mature have not been as pronounced. Studies to establish consistency of ageing determination methods over

the time series have been conducted but these were not presented and reviewed at this meeting.

The greatest abundance of haddock during the July survey in 2000-2004 was observed in the southwestern portion of NAFO Division 4W. This information was conveyed to the Groundfish Enterprise Allocation Council (GEAC). A Trial Fishery was conducted on slopes of Banquereau Bank in the northeastern portion of NAFO Subdivision 4Vs. The expected deliverables from GEAC, a report on the Trial Fishery, were not fulfilled. If the haddock working group recommends further trials, there should be better definition of the experiment and a clear description of the deliverables. The failure in the follow-through of the 2004 Trial Fishery was attributed to changes that occurred between the time that interest was expressed and the time that the Trial Fishery was conducted.

It was recommended that the objectives and coordinates of the juvenile haddock area closure in NAFO Division 4W should be reviewed. There was frustration expressed that earlier recommendation for such a review has been ignored.

It was agreed that the working document be completed as a **Res. Doc.**, with minor clarifications.

4VWX 5Zc POLLOCK

Remit

- For a range of pollock TAC options in 2005/06, estimate the risk that the
  - 2005/06 fishing mortality rate would exceed the F_{ref}
  - biomass at the beginning of 2006/07 would not achieve a 0%, 10% or 20% increase compared to the beginning of 2005/06.

  All sources of pollock catch, including bycatch in the redfish fishery, are to be included in this analysis.
- Develop candidates for limit reference points for use in management.

Working Papers: Gavaris, G. 2004. Pollock Harvest Strategy and Reference Points. RAP Working Paper 2004/28.

Neilson, J., and P. Perley. 2004. Update of Pollock Framework Assessment. RAP Working Paper 2004/30.

Presentation Highlights (Presenters: J.D. Neilson, S. Gavaris)

An assessment methodology review for pollock was completed in 2004, and included inputs up to and including 2002 (Res. Doc. 2004/040). The current assessment updates the results with 2003 indices and catch, and provides advice for the two stock components comprising the pollock resource in the Canadian Maritimes. This

completes the Framework Assessment for pollock. The fishery is currently focused almost exclusively on the western component. For the western component, the fishing mortality rate (F) has steadily increased from the early 1980s until 1994, when severe quota restrictions commencing in 1992 halted the increase. Quotas were relaxed again in 1998, causing a rapid increase in F. Subsequent reduced quotas and harvests have contributed to the decline in fishing mortality rate, which remains above the target level, particularly for the older ages. Population biomass was at its highest level in 1984, then steadily declined until 1999. Biomass has been rebuilding since but remains at a low level compared with 1984. The 1998 and 1999 year classes have helped the population recover somewhat, but the preliminary estimate of the 2000 year class does not look promising. The assessment methodology review examined yield-per-recruit analyses and stock-recruitment patterns to derive a fishing mortality reference point of F_{ref} =0.2. When stock biomass is less than 30,000 t, exploitation may be further constrained to achieve rebuilding. While the population has a high likelihood of achieving a 10% increase in biomass by the end of 2005/06 fishing year with removals as high as about 4500 t, the range of harvest strategies in the fishing year that are risk averse (25% risk of exceeding F_{ref}) to risk neutral (50% risk of exceeding F_{ref}) are about 2200 to 2900 t.

For the eastern component, indices from the summer research vessel surveys, while extremely variable, indicate that total mortality is high and increasing, even with relatively low landings from the fishery. Large-scale directed pollock fisheries should not be considered until the component recovers.

Discussion (Rapporteur: J. Black)

Before beginning the discussion, the Chair reiterated that it was not the role of this meeting to revisit the decisions taken in the assessment methodology review on how to conduct the analytical assessment (Res. Doc. 2004/040). The discussion on the pollock stock status should be limited to the inclusion of the recent data into the assessment methodology decided upon in the review, and the subsequent interpretation.

However, in the discussion, it was re-established that there is no consistent retrospective pattern in the pollock assessment. There was also considerable discussion about the appropriateness of the research vessel (RV) survey as an index of abundance for the pollock assessment. Concerns were twofold: that the coverage did not include important areas like George's Bank, and that the timing of the survey might not coincide with the timing of pollock on the Scotian Shelf. Scientists explained that the coverage area of the survey is comparable from year-to-year and there is only a concern if the area not covered is thought to contain a variable fraction of the total population. While the assessment methodology review determined that the summer RV survey (which does not include Georges Bank) reflected population abundance accurately, the fishing industry expressed concern that increased landings from Georges Bank in 2004 could bring this conclusion into question. It was also noted, that the 2004 survey point was not used in the model, due to the

substitution of vessels as described in the Introduction. The utility of the US spring and fall surveys was again questioned and it was re-established that this was considered in detail in the assessment methodology review, and the US surveys were found not to be useful. In fact, there was very patchy occurrence of pollock in the US surveys (see, for example, Res. Doc. 2003/110, Fig. 16) and cohorts could not be tracked (Res. Doc. 2003/045, Fig. 16). It was, however, concluded by the group that pollock, being a semi-pelagic, schooling species, are less well sampled by the summer RV survey than other gadids.

The Fishery

The fishing industry expressed concern that due to quota, gear conflict and/or allocation issues, the catch, effort and/or CPUE for pollock might be seen as being artificially low. Further, they also expressed concern that there may be misclassification of vessels in the commercial catch rate series as regards the selection of vessels directing for pollock. Science noted that the vessels selected for the CPUE series must have over 50% of their catch taken as pollock and must be a vessel with a history in the pollock fishery. The industry indicated that there might still be some directed redfish trips, by vessels with a history in the pollock fishery, whose catch was more than 50% pollock, e.g., a redfish-directed trip would be misclassified as a pollock-directed trip, and included in the CPUE calculations. As a point of clarification, it was noted that while CPUE data for 2004 are only partial, this is accounted for in the model as 'month' is a standardizing variable in the model.

Resource Status and Outlook

When examining the mean weights-at-age for pollock in the western component, it was noted that in recent years, small fish are smaller, and large fish are larger, when compared to the early years for the time series (1980s). The comment was made that there have been overall changes in the biomass of all species on the Scotian Shelf. The trend was for lower pollock condition during the 1990s.

It was noted that biomass was not calculated for the eastern portion of the Scotian Shelf. In the absence of a full assessment for the eastern component, science noted that indices from the summer RV surveys, while extremely variable, indicate that total mortality is high and increasing, even with relatively small landings from the fishery. Fishers questioned this statement and reported increased catch rates and landings for one gillnet vessel, in particular, directing for pollock in this area. They further noted that the low price for pollock combined with effort being diverted to other fisheries, has resulted in the low landings. Science noted that there was no obvious movement across the Laurentian Channel or westward, and reiterated concern for the increasing total mortality as seen from the survey data.

The fishing industry expressed concern that there seems to be a lag between the fishers' observations and the science. For example, fishers are seeing improved catch rates of pollock, especially on Georges Bank, but the estimated biomass is still

low. However, closer examination revealed that the fishers' observations are in fact consistent with the results of the population model given that in 2004 the population biomass, as estimated by the model, has doubled since 1999. Science staff also explained that for a schooling species such as pollock, it is possible for local abundances to be high while the overall population is in a depressed state. Thus, commercial fishery catch rates must be viewed with caution.

Harvest Strategy and Reference Points

During discussions of reference points for this stock, the Chair explained that the requirement to develop candidates for limit reference points for use in management was new since the assessment methodology review and would only apply to stocks as new assessments were completed. In the case of the stocks in question at this meeting, only pollock includes this application. The group felt the presentation on the development of limit reference points was very useful and clear, and requested that the pollock Res. Doc. include the text and figures (from the working document and presentation) pertaining to the development of limit reference points for use in the management of pollock. It was clarified when examining the decision rule graph for pollock (included in the Res. Doc.), that in the left zone, fishing would not normally occur, but could occur in some circumstances, and the middle zone would be more risk adverse than the right zone. It was noted that Fisheries Management (Ottawa) was working on creating rules for the three zones; and the group expressed the hope that there would be consultation on the development of these rules.

It was agreed that the two working documents be combined into a **Res. Doc.** with the following improvements: include 2003-2004 in the fishery distribution plots, extend the research vessel times series back in time where possible, add the line on the risk plot to show where biomass at the beginning of 2006/07 would not achieve a 0% increase compared to the beginning of 2005/06 (as requested in the remit), and include the text and figures pertaining to the development of limit reference points for use in the management of pollock (and represent the available data with a phase-plot).

CLOSING

The Chair concluded the meeting by thanking all participants, including the rapporteurs, for their active participation.

Appendix 1. List of Participants

Participant	Affiliation/Address	Telephone	Fax	E-mail Address
Armsworthy, Shelley	DFO/MFD/BIO	(902) 426-4231	(902) 426-1506	armsworthys@mar.dfo-mpo.gc.ca
Baker-Stephens, Nellie	ESFPA	(902) 889-2564	(902) 889-2633	esfpa@accesswave.ca
Belliveau, Ray	Charlesville Fisheries	(902) 762-2405	(902) 762-3158	charld@ns.sympatico.ca
Black, Jerry	DFO/MFD/BIO	(902) 426-2950	(902) 426-1506	blackj@mar.dfo-mpo.gc.ca
Brickman, David	DFO/OSC/BIO	(902) 426-5722	(902) 426-6927	brickmand@ mar.dfo-mpo.gc.ca
Clark, Don	DFO/MFD/SABS	(506) 529-5908	(506) 529-5862	clarkd@mar.dfo-mpo.gc.ca
Cooper, Bob	Aboriginal Fisheries	(902) 379-1211		bobcooper@efwc.ca
d'Entremont, Claude	Inshore Fisheries	(902) 762-2522	(902) 762-3469	inshore@inshore.ca
Fraelic, Jim	SSGFA	(902) 354-5682	(902) 354-5485	
Gavaris, Stratis	DFO/MFD/SABS	(506) 529-5912	(506) 529-4274	gavariss@mar.dfo-mpo.gc.ca
Giroux, Brian	SFMGA	(902) 742-6732	(902) 742-6732	sfmobile@ns.sympatico.ca
Hansen, Jon	DFO/RMD/Marine House	(902) 426-9046	(902) 426-9683	hansenj@mar.dfo-mpo.gc.ca
Hurley, Peter	DFO/MFD/BIO	(902) 426-3520	(902) 426-1506	hurleyp@mar.dfo-mpo.gc.ca
Johnston, Marc	NB DAFA	(506) 755-4000	(506) 755-4001	marc.johnston@gnb.ca
Kristmanson, Jim	DFO/FRB/Ottawa	(603) 991-6763	(603) 954-0807	kristmansonj@dfo-mpo.gc.ca
Maxwell, Judith	SFJFA	(902) 745-0994	(902) 745-0361	SFIFAA20@eastlink.ca
Mohn, Bob	DFO/MFD/BIO	(902) 426-4592	(902) 426-1506	mohnr@mar.dfo-mpo.gc.ca
Morrow, Denny	NS Fish Packers Assoc.	(902) 742-6168	(902) 742-1620	fishpackers@klis.com
Neilson, John	DFO/MFD/SABS	(506) 529-5913	(560) 529-5862	neilsonj@mar.dfo-mpo.gc.ca
Porter, Julie M.	DFO/MFD/SABS	(506) 529-5925	(560) 529-5862	porterjm@mar.dfo-mpo.gc.ca
Reardon, Clary	NS Dept. of Aquaculture & Fisheries	(902) 424-0349	(902) 424-1766	reardonc@gov.ns.ca
Saulnier-Davis, Caroll	YCFGA	(902) 742-9879	(902) 742-4884	Cameron.30@ns.sympatico.ca
Simon, Jim	DFO/MFD/BIO	(902) 426-4136	(902) 426-1506	simonj@mar.dfo-mpo.gc.ca
Stevens, Clark	ESFPA	(902) 889-2564	(902) 889-2633	esfpa@accesswave.ca
Stobo, Wayne	DFO/MFD/BIO	(902) 426-3316	(902) 426-1506	stobow@mar.dfo-mpo.gc.ca
Zwanenburg, Kees	DFO/MFD/BIO	(902) 426-3310	(902) 426-1506	zwanenburgk@mar.dfo-mpo.gc.ca

Appendix 2. Letter of Invitation

Marine Fish Division
Fisheries & Oceans
Maritimes Region
531 Brandy Cove Road
St. Andrews, NB E5B 2L9
(Tel: 902-529-5925)
(Fax: 902-529-5862)

16 November 2004

Distribution:

Subject: **Maritimes Region RAP Meeting, Fall 2004**

The Maritimes Region Assessment Process for groundfish stocks on the Scotian Shelf will meet on 23-25 November 2004, to develop stock status outlooks and complete the Stock Status Reports (SSR). The remit for the meeting is attached.
On behalf of the Region, I apologize for the lateness of this invitation, and regret any inconvenience this might have caused.

Presentation and discussion of data inputs to the assessments, analyses conducted, and formulation of the "Outlook" portion of each SSR will occur during the 2.5-day meeting.

The agenda is attached. Please note, sessions will start on time, and the timing on the agenda will be adhered to as closely as possible. The meeting location is Dartmouth (Bedford Institute of Oceanography).

If you plan to accept this invitation, please inform Wanda Farrell (ph: 902-426-4890: fax: 902-426-1506 or e-mail: farrellw@mar.dfo-mpo.gc.ca) at your earliest convenience.

Yours sincerely,

Julie M. Porter

Julie M. Porter
Chairman

Attachments
JMP:wmf

Please Note: Attendees are required to check in with Commissionaire at the Main Entrance to Bedford Institute of Oceanography (BIO) upon arrival. You will be escorted to the boardroom.

Appendix 3. Agenda

Maritimes Regional Advisory Process
on Scotia-Fundy Groundfish stocks

23-25 November 2004
George Needler Boardroom
Bedford Institute of Oceanography
Dartmouth, Nova Scotia

November 23rd – Tuesday

09:00 – 09:30	Welcome and Introduction (Chair)
09:30 – 10:15	Overview of Oceanographic Conditions (Brickman)
10:30 – 12:00	4X/5Y cod (Clark)
12:00 – 13:00	Lunch
13:00 – 14:45	4X/5Y cod (Clark)
15:00 – 17:00	4TVW Haddock (Mohn)
	GEAC Report Review (if report available)

November 24th – Wednesday

09:00 – 12:00	4VWX 5Zc Pollock (Neilson)
12:00 – 13:00	Lunch
13:00 – 17:00	Report Review

Appendix 4. Remit

Maritimes Regional Advisory Process
on Scotia-Fundy Groundfish stocks
23-25 November 2004
Bedford Institute of Oceanography

Background

Each fall, the Maritimes Science Branch reviews the status of Scotia-Fundy groundfish stocks. The 2004 RAP fall review will focus its attention on the resources indicated below. Many of the evaluations will be impacted by the lack of 2004 summer survey information, due to technical problems with the RV Needler. Thus, in a number of instances, full evaluates will not be undertaken, and will be addressed by the Expert Opinion (EO) process.

Objectives

The following issues will be addressed for each stock in order to develop scientific consensus through external peer review.

4X/5Y cod

- Evaluate the completeness and accuracy of fishery statistics for cod in 4X/5Y improved in 2003 or 2004
- Determine if the biomass of cod has increased sufficiently to consider an increase in landings above the current TAC of 6,000 t. If not, evaluate the prospects for rebuilding if catches are maintained at the current TAC of 6,000 t. Provide details for the Bay of Fundy and Scotian Shelf separately

4TVW Haddock

- In support of potential changes in management measures in 2005/06, report on recent trends in body growth and recruitment of 4TVW haddock
- If available, consider for information only a report from GEAC on the 2004/05 Trial Fishery

4VWX 5Zc Pollock

- For a range of pollock TAC options in 2005/06, estimate the risk that the
  - 2005/06 fishing mortality rate would exceed the F_{ref}
  - biomass at the beginning of 2006/07 would not achieve a 0%, 10% or 20% increase compared to the beginning of 2005/06

  All sources of pollock catch, including bycatch in the redfish fishery, are to be included in this analysis.
- Develop candidates for limit reference points for use in management

Products

A Stock Status Report (SSR) will be produced for each resource assessed at the RAP meeting.
A Proceedings document will be produced, which will summarize the discussion of the RAP meeting.
Research documents will be produced as recommended by the RAP meeting.

Participation

Participation at the RAP meeting will be solicited from the following:

- DFO Science & Fisheries Management
- FRCC
- Industry

Appendix 5. List of Documents Tabled and References

List of Documents Tabled

Clark, D.S., and J.M. Hinze. 2004. Assessment of Cod in Division 4X in 2004. RAP Working Paper 2004/27.

Gavaris, G. 2004. Pollock Harvest Strategy and Reference Points. RAP Working Paper 2004/28.

Mohn, R.K., and J.E. Simon. 2004. Growth and Distribution of 4TVW Haddock. RAP Working Paper 2004/29.

Neilson, J., and P. Perley. 2004. Update of Pollock Framework Assessment. RAP Working Paper 2004/30.

References

Carruthers, E.H., J.D. Neilson, P. Perley, D. Clark, and S.J. Smith. 2003. Evaluation of research vessel and Individual Transferable Quota (ITQ) survey data as abundance indices for pollock. CSAS Res. Doc. 2003/110, 40 p.

Neilson, J.D., P. Perley, and S. Gavaris. 2004. Pollock stock status in the Canadian Maritimes: a framework assessment. CSAS Res. Doc. 2004/040, 48 p.

Neilson, J.D., P. Perley, E.H. Carruthers, W. Stobo, and D. Clark. 2003. Stock structure of pollock in NAFO Divs. 4VWX5Zc. CSAS Res. Doc. 2003/045, 53 p.

Appendix 6. Letter for Adoption of Proceedings

Marine Fish Division
Fisheries & Oceans
Maritimes Region
531 Brandy Cove Road
St. Andrews, NB
E5B 2L9

7 December 2004

Distribution: Fall RAP participants

Subject: **Adoption of the Proceedings of the Fall 2004 RAP Meeting**

On behalf of the Region, thank you for your participation in the recent Maritimes Region Assessment Process for groundfish stocks on the Scotian Shelf (23-24 November 2004).

Please find attached the draft proceedings of the meeting for adoption by correspondence. **Please advise me of any changes or corrections by 16 December 2004.** Please refer to specific page and line numbers when noting changes or corrections. If I have not received any comment from you by 16 December 2004 that will indicate that you have no changes or corrections to make on the attached draft.

Please do not hesitate to contact me if you require further clarification.

Thank you for your cooperation. It has been a pleasure to work with you.

Yours sincerely,

Julie M. Porter

Julie M. Porter
Chairman
Tel: 902-529-5925
Fax: 902-529-5862
porterjm@mar.dfo-mpo.gc.ca

Attachments